FACT SHEET FOR PREPARATION OF STATE WASTE DISCHARGE PERMIT FOR WEYERHAEUSER TECHNOLOGY CENTER

PERMIT NUMBER:	ST-7379
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Weyerhaeuser submitted an application for a state waste discharge permit in 1993. Up to that point it had been unclear whether Federal Way would be delegated pretreatment authority. Due to the fact that the Department had determined other dischargers to be of higher priority, it took no further action. In late 1995, Weyerhaeuser requested that the state make a determination whether a state waste discharge permit was required.

Ecology conducted an inspection and determined that a state waste discharge permit would be required for this applicant. The decision was made on the basis of the volume and potential characteristics of wastewater coming from the laboratories and pilot plant operations being conducted at this site. Many of the laboratories used organic extractions in the course of analytical work. Taken together, the laboratories used considerably more chlorinated organic solvents than a typical large hospital. The management of this waste appeared to be good. Nevertheless, when solvents are used on this scale, there are numerous possibilities for inadvertent discharge to the sanitary sewer system.

In addition to the above solvents, a large number of reagents were employed in the laboratory. Some of these reagents contained heavy metals. Interviews with laboratory personnel regarding frequency of use and waste handling practices indicated that the likelihood of most of these metals being discharged in environmentally significant quantities is quite low. However, mercury is used in significant amounts in the performance of COD analyses, and is also present in much lower concentrations in some of the samples from older mills.

A number of paper related processes (e.g. pulping and bleaching) resulted in some discharges of wastewater. A number of these discharges would be expected to contain significant concentrations of BOD, TSS, chlorine and high or low pH.

DESCRIPTION OF FACILITY

Wastewater from this facility is piped in the following segregated streams:

1. The laboratory waste system drains the laboratories.

2. The high bay area drains pilot plant processes.

3. The potable/sanitary system drains wastewaters similar to domestic sources.

The following areas have been inspected by WDOE and represent most of the laboratories discharging significant amounts of wastewater to the sanitary sewer.

NLM 228: This laboratory is used for analytical work involving metals samples. Samples and wastewater from analytical work with significant metals values are stored in drums in a satellite accumulation area, and disposed of as hazardous waste. Mercury is one of the main metals quantified in this laboratory. Acetone, methanol, and chloroform are used for extractions in this laboratory. Wastewater handling processes appeared to be good. Metals and organic solvent bearing wastewaters are stored in a satellite accumulation area located in the room.

NLM 205: This laboratory is the resin laboratory. Various organic solvents are used for preparations and formulations of resins.

NLM216: This is the sample management area where samples are labeled and distributed. Very little wastewater is typically discharged from this area.

NLM217: This area is used for cleaning of laboratory glassware. Acid dichromate is not used in the cleaning operations. Sulfuric acid and a peroxide salt are the main cleaning agents used here. A considerable amount of acetone is used in the drying of glassware.

SLM 220: This laboratory is the black liquor testing area. Wastes containing metals are disposed of in the satellite accumulation area in this laboratory and disposed of as hazardous waste. Black liquor samples are typically returned to the mill. A review of reagents on the shelves and interviews with laboratory personnel indicated largely innocuous reagents.

SLM212: The conventional laboratory employs a large number of reagents, both organic and metals-containing. Freon and dichloromethane are the main organic solvents used. The dichloromethane is used in wood chip extractions. Chloroform is used only once or twice per year in a surfactant test.

They have stopped using mercuric chloride as a preservative. Zinc acetate is a reagent used in sulfite determinations. 25 to 30 gallons per month of waste from COD analyses are generated by the Center. COD tests result in a large volume of silver and mercury bearing wastewaters. These wastewaters are handled as hazardous waste and not discharged to the sewer. This includes the first rinse as well as the sample/reagent mixtures.

SLM 223: The GC (gas chromatograph) laboratory does not appear to be a significant source of wastewater.

SLM211: The Organic Laboratory employs methylene chloride, acetone, hexane, methanol, and ether as the main agents for extractions. All samples in this laboratory end up in small vials, which are disposed of as hazardous waste.

HIGH BAY AREA: This area is employed for the pilot scale testing of pulp/paper/forest products processes such as pulping, bleaching, and Kraft Processing. Testing of some materials such as laminates is also performed in this area. Although significant amounts of BOD and TSS, as well as some wastewater outside the normal pH range are generated in this area, the characteristics of the wastewater generated in this area are expected to be largely innocuous. Some chlorine from bleaching processes is also discharged on some occasions from the Bleach Lab. The pulping laboratory is the source of some caustics, sulfides, potassium iodide, thiosulfite, and small amounts of hydrochloric acid. As noted above, the wastewater from the highbay area is carried in a separate pipe prior to mixture at the main discharge point.

WET LAB: Starch and pigments are the main substances found in water discharged to the sanitary sewer from this laboratory.

MACHINE SHOP: The high bay area contains a moderate sized machine shop containing about a half dozen each of milling machines and lathes of intermediate size. Cutting oils and coolants are not discharged to the sewer. The manager of the machine shop was environmentally aware and proactive.

PLANT PROPAGATION: A plant propagation site is maintained on-site.

BOILER WATER: Two boilers are operated at the site. Boiler related/blowdown/draindown water has been included in the state waste discharge permit as part of sample point 002 for flow. The boiler discharge does not pass through sample point 001 (the V-notch weir).

COOLING WATER: A cooling tower is employed for non-contact cooling water. The wastewater discharge associated with periodic blowdown and during maintenance drainings is not expected to be any greater than 2000 gallons per day. This limit is therefore placed in the permit. This wastewater is discharged into the laboratory wastewater system passing through the V-notch weir (Sample Point 001).

INDUSTRIAL FLOW RATES

A V-notch weir has been installed which continuously measures and records the discharge rate of industrial wastewater. The highest peak instantaneous flow rate has been measured as 160 gallons per minute. Average flow values are approximately 50 gallons per minute. A limitation of 150,000 gallons per day has been placed in this permit and represents a flow of 100 gallons per minute throughout the day. This daily flow is larger than any flow yet identified. The flow measured by the weir includes the cooling tower blowdown/maintenance draindown, but not the boiler blowdown/maintenance draindown.

LIMITATION ON TOTAL TOXIC ORGANICS

Analyses for TTO's (Total Toxic Organic compounds) indicate the absence of these compounds in the industrial wastewater when measured using a 10 microgram per liter detection limit. Nevertheless, the Department feels there is some potential for intermittent release of these compounds if procedures are not carefully adhered to. Therefore quarterly monitoring for these compounds is required in this permit. A limit of 5 milligrams per liter has been established for the sum of TTO's. This limit is approximately twice the limitation for the categorical metal finishing standards. No AKART (All Known Available and Reasonable Methods of Treatment) standard for TTO's has been established for research laboratories. Therefore, the above standard was adapted from the metal finishing standard. The limit was set higher than that for the metal finishing standard because the potential for discharge of high concentrations of TTO's from laboratories is considered to be higher than that for the metal finishing industry. This permittee is expected to be able to comply with the TTO limitation by means of implementation of best management practices as opposed to application of removal technology.

LIMITATION FOR MERCURY

The limitation for mercury of 0.05 mg/L is based on AKART. The local limit established by Lakehaven Utility District is 0.29 mg/L. The AKART limitation was used as it is the more stringent of the two limitations.

AKART APPLICABILITY

The above permit limitations are consistent with AKART (All Known Available and Reasonable Methods of Treatment) standards.

SEPA COMPLIANCE

This is an existing facility. Therefore, it is exempt from demonstration of compliance with SEPA with respect to issuance of this state waste discharge permit.

EXPIRATION DATE:

This permit is scheduled to expire in State of Washington Fiscal Year 2002 (July 1 2001 to June 30, 2002) in order to be consistent with the Department of Ecology basin planning schedule which has set Fiscal Year 2002 as the permit issuance year for the Cedar/Green Water Quality Management area (watersheds). The expiration date is therefore July 15, 2001.